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Final Report of the Meeting Held in the United States September 1st to September 15th, 1974 of the Project, "Protection and Management of Lakes and Estuaries of the Working Group on Water Pollution Prevention."

## I

In accordance with the US-USSR Agreement on Cooperation in the field of Environmental Protection, the delegation of USSR specialists concerned with the investigation of lakes and estuaries visited the United States from the 1st to the 15th of September 1974. During the visit the U.S. and Soviet experts on the Project implemented the plans described in the minutes of the first meeting of the joint US-USSR Working Group on "Water Pollution Prevention" signed in Moscow March 23, 1973 and elaborated at the first meeting of the Project in August 1973.

The Soviet delegation was headed by Dr. Nina Gasilina, Head of the Department of Investigation and Monitoring of Environmental Pollution of the Main Administration of the Hydrometeorological Service at the Council of Ministers of the USSR.

The American delegation was headed by Dr. Tudor T. Davies, Director of the Environmental Protection Agency, Grosse Ile Laboratory, and Director of Large Lakes Research Program.

The full list of the Soviet delegation is attached and a listing of the U.S. experts that took part in discussions is also attached.

## II

The Soviet delegation was hosted for the first week of the meeting at the EPA Grosse Ile Laboratory which conducts the Large Lakes Program for the Environmental Protection Agency. The following reports of U.S. scientists were presented with associated demonstrations of equipment and techniques:

1. A review and demonstration of in situ monitors for basic

Water Pollution

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- environmental parameters; sediment oxygen demand studies; and algal assay techniques - Mr. Thomas
2. Review of the methodology for analysis of chemical parameters in lake water - Dr. Mullin
  3. Review of data handling procedure using EPA computer system - Mr. Richardson
  4. Discussion of algal modeling techniques - Dr. Bierman
  5. Description of the near shore hydraulic transport models for Lake Erie - Dr. Lick
  6. Review of transport models for Saginaw Bay - Mr. Richardson
  7. Review of the technology for development of a heat budget for Lake Ontario - Dr. Pinsak
  8. Discussion of the circulation of Large Lakes, particularly Lake Michigan - Dr. Mortimer
  9. Review of the research program of the Bureau of Sport Fisheries and Wildlife for the Great Lakes - Dr. Tait
  10. Review of the nutrient-eutrophication research conducted on the Great Lakes - Dr. Schelske
  11. Simulation of algal productivity in Lake Michigan - Dr. Canale
  12. Review of the EPA management and enforcement work on the Great Lakes by Mr. Adamkus, Mr. McDonald and Mr. Zar
  13. Review of the research on waste treatment technology - Mr. Convery
  14. Review of the analytical quality control and biological and chemical analysis method development - Mr. Ballinger.

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15. Review of the research on criteria and standards development for drinking water in the U.S. - Dr. Gorchev and Dr. Robeck
16. Review of the predictive simulation development for eutrophication of the Great Lakes - Dr. Thomann, Dr. DiToro and Dr. O'Connor

During the period of the visit the Soviet delegation reviewed the Soviet progress and technology in the areas under discussion. A considerable exchange of literature on these various subjects was made by the experts of the two delegations and future exchanges of scientific literature was organized by the individual scientists and by the two delegations. A technical field trip to Saginaw Bay was organized to demonstrate the U.S. methods for collection of information in the field. The Soviet specialists had an opportunity to familiarize themselves with the system and organization of collection and use of biological and chemical data from the Great Lakes. The preceding brief outline of the discussions held during the project meeting merely highlights the great range of discussions and interchange of concepts, approaches and conclusions that occurred during the meeting of the project.

There was full opportunity for discussion during the meeting and both Soviet and U.S. specialists made considerable progress in both advancing and understanding of the other's work and improving their approach to the subject from the experience of the other side. Both sides agreed that the discussions had been mutually beneficial and that a significant exchange had been accomplished.

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Within the course of the discussions of both delegations it was concluded that further exchange of information and a more formal development of collaborated research is essential so that both sides can benefit from the experience of the other.

The following recommendations for future work of this project on the "Protection of Lakes and Estuaries" are proposed to the Working Group on "Water Pollution Prevention".

1. Both sides consider it necessary to carry out inter-comparisons of existing methods of analysis. This program was initiated in 1973 by the analysis of a split water sample collected from Lake Baikal by EPA and Hydromet. The results of this intercomparison show no significant differences in the analyses conducted by the two countries. It is proposed that the two countries expand the intercomparison within the next year to the study of water, residues accumulated in fish, and the chemistry of sediments. To accomplish this, the following procedure is suggested:
  - Analysis of actual water samples collected from Lake Baikal and the Great Lakes. The samples would be split by the collecting agency. The water sample would be preserved and transmitted to the other agency. Both laboratories would conduct the analysis on the sample two months after the date of collection.
  - Standard water samples prepared by the Water Quality Assurance Group of EPA at approximately the concentrations found in oligotrophic lakes will be

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simultaneously analyzed by both groups two months after the date of the mailing of water samples. Sediments collected from both lakes will be analyzed in the same fashion.

2. It is proposed that a joint study of the chemical residues in fish from the Great Lakes and Lake Baikal be conducted in the following manner:
  - A. U.S. scientist will visit Lake Baikal in the summer of 1975 and with a Soviet counterpart will design a joint experiment for this project. They will collect whole fish, freeze the samples, homogenize the frozen fish and split the homogenate into two parts. The two sides will then conduct their extraction procedures for chemical residues from these two split samples.
  - The U.S. specialist will participate in the analysis of the samples in the Soviet Union and the Soviet specialist will participate in the sample analysis in the U.S. On the U.S. side an expert from the EPA Duluth Laboratory will participate in this project. A joint publication of the results of this study will follow. A similar joint study of residues in Great Lakes fish can be conducted simultaneously.
  - A tentative suggestion for a toxic materials symposium was discussed with a possible date in 1976.
3. It is proposed that both sides review the respective standard methodology of the other side for the collection of hydrologic,

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chemical and biologic data. Both sides will exchange standard literature and provide reviews to the other side. The Soviet side proposed that it would investigate the possibility of publishing translations of the EPA Standard Methods for Chemical and Biological Analysis. In that instance, full credit will be given to the original sources for the document and that it would be published as a document of the US-USSR "Water Pollution Prevention" Working Group.

The final proposal concerns the interfacing of the considerable activity in both countries in the development of mathematical models aimed toward the management of water quality in large lakes and optimizing future development of the drainage basins of these lakes. These models are aimed toward the assessment and management of man's activity in agricultural, municipal, and industrial uses of the water affecting large lakes. It is proposed that in association with a larger symposium sponsored by the Working Group on Water Pollution to be held in the Soviet Union in the 3rd or 4th Quarter of 1975 that a special group should assess the current status of large lakes models and develop a plan for future collaborative work between the two countries to accelerate the development of the models and implement their use. Dr. Zenin and Dr. Davies will produce a listing of the invited papers to be presented at the symposium. These papers will be delivered by the foremost experts in the field of hydrodynamics, chemical and biological models; the development of which is aimed toward lake water quality management. The papers will be prepared by June of 1975 and exchanged at that time.





Members of the Soviet Delegation

1. Dr. Nina K. Gasilina - Head of Delegation, Head of Department of Investigations and Monitoring of Environmental Pollution, Main Administration of the Hydrometeorological Service of the Council of the Ministries of the USSR (Moscow D-376, Pavlika Morosova St., 12, Hydromet)
2. Dr. Gennadiy A. Goman - Scientific Worker, Limnological Institute of the Siberian Branch of the Academy of Sciences of the USSR (Listvennichnoe - on - Baikal, Irkutsk 666016, LIN)
3. Dr. Evgenily V. Yeremenko - Chief of Department of Hydraulic Processes, All - Union Research Institute of Water Protection, Ministry of Reclamation and Water Management of the USSR (Kharkov-59, Bakulina St., 6, VNITVO)
4. Dr. Vladimir A. Znamensky - Chief of Department of Lakes, the State Hydrological Institute, Hydromet (Leningrad, Vasiljevsky Ostrov, 23, GGI)
5. Dr. Yuriy E. Kazakov - Expert of the Secretariat of the Joint US-USSR Committee on the Cooperation in the Field of Environmental Protection (Moscow D-376, Povlika Morosova St., 12, Hydromet)
6. Dr. Olga M. Kozhova - Director of Biological Institute of the Irkutsk State University (Irkutsk, K. Marks St., 1, IGU)
7. Dr. Vadim V. Cherepanov - Scientific Secretary of the Limnological Institute of the Siberian Branch of the Academy of Sciences of the USSR (Listvennichnoe - on - Baikal, Irkutsk 666016, LIN)

1. Dr. Tudor T. Davies - U.S. Co-Chairman of the Project on the Protection of Lakes and Estuaries, Director of the Grosse Ile Laboratory of the Environmental Protection Agency, NERC-Corvallis, Grosse Ile, Michigan
2. Mr. Walter Rittall - Coastal Pollution Branch, Pacific Northwest Laboratory of the Environmental Protection Agency, NERC-Corvallis, Oregon
3. Mr. John Carr - National Marine Fisheries, Ann Arbor, Michigan

Experts

<u>Mr. Nelson Thomas</u>	)	
<u>Mr. William Richardson</u>	)	
<u>Dr. Michael D. Mullin</u>	)	EPA, Grosse Ile Laboratory
<u>Dr. Victor Bierman</u>	)	
<u>Dr. Howard Tait</u>		Bureau of Sport Fisheries & Wildlife, Ann Arbor, Mich.
<u>Dr. Claire Schelske</u>		University of Michigan, Ann Arbor, Michigan
<u>Dr. R. Canale</u>		University of Michigan, Ann Arbor, Michigan
<u>Mr. Howard Zar</u>	)	
<u>Mr. McDonald</u>	)	EPA, Region V, Chicago, Illinois
<u>Mr. V. Adamkus</u>	)	
<u>Mr. Dwight Ballinger</u>	)	
<u>Mr. John Convery</u>	)	NERC-Cincinnati, Ohio
<u>Mr. L. Lefke</u>	)	
<u>Dr. H. Gorchev</u>	)	EPA Headquarters, R&D, Washington, D.C.
<u>Dr. R. Thomann</u>	)	
<u>Dr. D. TiToro</u>	)	Manhattan College, New York, N.Y.
<u>Dr. D. O'Connor</u>	)	